DOCUMENT RESUME

ED 141 266 95 SP 010 939

AUTHOR McKnight, Philip C.; Bush, Robert N.

TITLE Microteaching: A Selected Bibliography.

INSTITUTION ERIC Clearinghouse on Teacher Education, Washington, D.C.

SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE May 77
NOTE 46p.
AVAILABLE FROM ERIC Clearinghouse on Teacher Education, 1 Dupont Circle N.W., Suite 616, Washington, D.C. 20036 (1-9 copies, $1.00 ea.; 10-99 copies, $0.95ea.; 100+ copies, $0.90ea.)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS *Annotated Bibliographies; *Bibliographic Citations; Educational Development; Educational Research; *Microteaching; Teacher Education; Teaching Skills; Video Tape Recordings

ABSTRACT

This bibliography contains a selection of documents and journal articles on microteaching found in the ERIC data base. The entries were selected for their quality, uniqueness, and clarity of presentation and represent a sample of those projects that have made an important contribution to the development of microteaching for research and training. Citations appear in alphabetical order under subject headings and, when available, with an ERIC abstract or annotation. An introduction and a discussion of the development of microteaching are included. (MM)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ERIC CLEARINGHOUSE ON TEACHER EDUCATION

ED141266

MICROTEACHING:

A SELECTED BIBLIOGRAPHY

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Bibliographies on Educational TopicS

SP010 939

2

8

MICROTEACHING:

A SELECTED BIBLIOGRAPHY

Philip C. McKnight
University of Kansas

Robert N. Bush
Stanford University

ERIC Clearinghouse on Teacher Education
Suite 616, One Dupont Circle
Washington, D.C. 20036

May 1977
SP 010 939

ERIC Clearinghouse on Teacher Education

The material in this publication was prepared pursuant to a contract with the National Institute of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Prior to publication, the manuscript was submitted to the American Association of Colleges for Teacher Education (AACTE) for critical review and determination of professional competence. This publication has met such standards. Points of view or opinions, however, do not necessarily represent the official view or opinions of AACTE, the Clearinghouse, or the National Institute of Education.

CONTENTS

Foreword iv

INTRODUCTION 1

RESEARCH AND DEVELOPMENT: 1970-1975 3

COMMENTS 5

SUGGESTED PRIORITIES 5

SELECTION OF BIBLIOGRAPHIC ENTRIES 6

THEORY, RESEARCH, AND GENERAL (BIBLIOGRAPHY) 8

I. Research on Microteaching Versus Other Types of Teacher Training 8

II. Research and Development on Various Aspects of Microteaching: Technical Skills, Different Configurations, Feedback 9

Modeling, 15; Reactions/Evaluations, 16; Experiments With Flanders and Other IA Systems and Microteaching, 16; Verbal and Non-Verbal Behaviors in Microteaching, 18; Personality Correlates, 18, Effects of Microteaching and/or Videotape on Student Teacher Behavior and Student Achievement, 19

III. Microteaching as a Basic Strategy in Education R & D, Developing New Teacher Training Materials and Other Levels of Inquiry 22

IV. Description of Programs Using Microteaching Including Specific Materials, Manuals 23

Teacher Education, 23; Teacher Education: Foreign Language, 29; Postsecondary Teaching, 30; Personal Growth Counseling, Assertion Training, Self Assessment, 31; Technical Skills of Teaching, 32; Minicourse, 32

V. Bibliographies, Concept Programs, Critical and Protagonists' Papers 35

About ERIC 38

EDRS Order Form 39

FOREWORD

Since its inception in the early sixties, microteaching has been widely acclaimed as an effective means of telescoping practical teaching experiences into an intensive preservice program. In microteaching, clinical training concentrates preservice teachers' attention on vital elements of classroom instruction procedures, and minimizes irrelevant aspects. Working in small groups, students teach a brief lesson; participate in a critique, frequently accompanied by videotaped feedback; then rethink, revise, and reteach the lesson. This sequence is repeated until satisfactory mastery is attained.

The authors of this publication are leading proponents of microteaching. Dr. Robert N. Bush was one of the original developers of the strategy at Stanford University, and has continued his research into microteaching's effects. Dr. Philip C. McKnight, who as a teaching assistant worked with Dr. Bush at Stanford University in the late sixties, now is Director of the Office of Instructional Resources at the University of Kansas. They have selected entries for the bibliography from the ERIC data files, Resources in Education (RIE) and Current Index to Journals in Education (CIJE). Their introduction provides a historical perspective and a description of the categorical arrangement of entries.

Documents abstracted in RIE generally are unavailable from commercial sources; however, they usually can be obtained in either microfiche or xerographic copy from the ERIC Document Reproduction Service (EDRS). An EDRS order form is included at the end of this booklet. CIJE articles are not reproduced by ERIC; readers are referred to the original journals, available in many libraries.

The purpose of this bibliography is not only to acquaint readers with documents available from a search of the ERIC data bases, but to serve as a departure for further study as well. Assistance in making ERIC holdings on microteaching more extensive is welcome, and readers are encouraged to submit documents for evaluation and possible inclusion in the ERIC data base.

Appreciation is expressed to the authors for their careful analysis of the citations, and to Maxine Sitts, formerly publications associate at the Clearinghouse on Information Resources, Stanford University. When that clearinghouse was transferred to Syracuse University, work on the bibliography had been virtually completed. Because of the importance of the microteaching concept and techniques to teacher education programs, the Clearinghouse on Teacher Education assumed responsibility for the final production of this document and its distribution through the series, Bibliographies on Educational Topics. We hope that this publication will prove useful, to researchers and practitioners alike.

Karl Massanari
Director, ERIC Clearinghouse
on Teacher Education

INTRODUCTION

Microteaching represents a significant departure from traditional forms of teacher training and research. The assumptions behind its initial development at Stanford University in the early 1960s by R. N. Bush, D. W. Allen, and F. T. McDonald reflected alternative views to the more traditional beliefs about the most efficient way(s) of preparing preservice teachers for their professional careers. Instead of having students accustom themselves to the classroom environment over a long period of student observation (typically six months to two years) and/or aiding and/or teaching, the microteaching clinic was seen as being capable of acclimating students to teaching over a much shorter period (e.g. three months). Frequent microteaching sessions complemented work in foundation and method courses. It was assumed that microteaching, accompanied by positive, intensive supervision and guidance, would adequately replicate longer training programs. Early studies comparing microteaching with traditional student teaching indicated that the assumptions were valid because it was able to provide a succinct, realistic, and nurturant teaching environment. Though a scaled down teaching encounter, microteaching is not simulated teaching. Teachers are teaching--not role playing. What has been eliminated are many of the extraneous variables of traditional programs. It is a helpful, supportive setting because it reduces the complexity and the scope of such classroom components as the number of students and length of lessons, and because it provides the trainees with information about their performance immediately after the lesson is completed. The typical lesson follows a regular sequence: after teaching a brief lesson, usually five to ten minutes, to a small group of students (4-8), the trainee and the supervisor (often a more experienced teacher) critique the lesson. If a videotape recording has been made of the lesson, it is replayed at this point. After the critique, the trainee is given time to revise the lesson before reteaching it, usually to a different group of students. The reteach is also followed by a critique, and the process is repeated until a specified level of mastery is attained.

Many variations of this pattern are possible, reflecting a high degree of flexibility which is an important part of microteaching's value. For example, teachers may be given training in a teaching skill before the initial teaching session. In the original work at Stanford University on the development of microteaching and the technical skills of teaching, training involved the presentation of a skill through videotaped models. A variety of training and research configurations are available by using different lesson lengths, number of students, subject level and content, the use of videotape and/or supervisor feedback, and the presence of model tapes of teaching skills. Such control of the variables has been of great value to training and research efforts formerly hampered by the distracting and confounding nature of a variety of natural classroom settings. In training programs, for example, integration of theory and practice in the school was affected adversely by the difficulties in achieving continuous and coherent programs of supervision.

The use of videotape presentation and feedback also helps to make more parsimonious use of time. Videotaped (or filmed) models of teaching skills

provide the teacher with a precise, valid notion of the attributes and advantages of the skill to be practiced. The substantial amount of research on the power of modeling to change behavior suggests that the teacher will, in fact, emulate and adapt the skill in subsequent teaching.

Videotape used in the playback session after the lesson enables the teacher to receive complete and reliable information about the performance. Instead of receiving feedback secondhand and often long after the fact from a supervisor's subjective memory, the teacher is able to see himself as the students saw him. Videotape is so important to microteaching's value that although microteaching can be done without it, it seems as if they are always associated. These basic aspects of microteaching components permit them to be manipulated for different training and research purposes. This not only allows versatility, but permits teachers, supervisors, and researchers to see both the big and the little picture of their plans and actions. For example, technical skills can be taught and/or studied in a controlled context, yet their general power and place in the larger classroom environment can also be accounted for.

The parsimonious and manageable nature of microteaching is the result of the scientific approach to teaching which was taken by the developers of microteaching and which led to a component approach to its design. In the same way as the study of teaching has been broken down into what has been called "micro-criteria" in recent years, microteaching is, in actuality, a series of variables. Because of this discreteness they can each be addressed separately, enabling the final composite program to be based upon a careful decision-making process involving each of microteaching's attributes. This component identification has made research on teaching and microteaching easier and more useful. It has also made teacher training more understandable to beginning teachers and to experienced teachers also. Thus, microteaching not only reflects a newer and promising attitude toward the improvement of teaching, but has contributed in an important way to the spread of that attitude by giving the practitioner as well as the researcher the means of breaking the teaching process into more manageable parts.

The early years of microteaching at Stanford saw complementary training and research efforts. The complementary aspect of the work is notable because it indicated that research on teaching could proceed harmoniously, even unobtrusively, with teacher training. This was of course due in part to the removal of training and research from the busy school setting to the more manageable university setting--the microteaching clinic--and in part to the scaled down, controlled setting with identifiable variables. But the most important aspect of such cooperative efforts may be that teachers and researchers could begin to see how they are both concerned with the same phenomena. It seems obvious that this should be the case--but when training and research were separated in location, separate ideas and ideals emerged. Bringing the two together may be one of the most beneficial aspects of microteaching. Through common tasks and focus, a more valid, comprehensive understanding of the problems should emerge--as, for example, when the methods course teacher works with the psychologist in planning a training sequence on the skill of questioning in discussion groups.

RESEARCH AND DEVELOPMENT: 1970-1975

Although several studies have focused on a comparison of microteaching with other types of teacher training, most of the research has attempted to develop and refine the components of the program. These efforts have involved interaction analysis systems; different configurations of modeling, feedback, and supervision; effects of microteaching as a basic research strategy; applications of the concept to various training situations and settings outside the United States (notably Australia, Germany, Nigeria, Sweden, and Scotland); and the use of microteaching in assertion training and self counseling. In addition, there have been several bibliographies and review papers on the concept and its components.

For the present review, the following major categories were selected to permit the sources reviewed to be categorized in a reasonably distinct manner:

I. Research on Microteaching Versus Other Types of Teacher Training

II. Research and Development Aspect of Microteaching

Microteaching components studied included patterns and styles of supervision and feedback (including self and supervisory feedback, remote vs. face to face feedback, immediate vs. delayed feedback, and written vs. videotaped and audio vs. videotaped feedback); feedback conditions and the type of teaching skill; videotaping; and trainee role expectations of the supervisors. Four studies focused on the effects of modeling on trainees' verbal and nonverbal behavior, while three studies dealt with reactions and evaluations to microteaching. The six studies on interaction analysis systems represent an important integration of two recent innovations in education. Symbiotic integration of microteaching and interaction analysis research should be of significant value to both training and research. Microteaching should provide a valuable training and development context for interaction analysis, while interaction analysis procedures should help improve the value of feedback to students and researchers. In the case of the technical skills of teaching, for example, more reliable and valid feedback may assist in the efforts to validate the skills and to provide them with a conceptual framework.

Other areas of research reflecting the refinement of microteaching to provide more sophisticated training are indicated by the studies on verbal and nonverbal behaviors in microteaching, and the influence of personalities on the process.

As might be expected, there has been considerable interest in the effect of microteaching itself on subsequent teacher behavior and student achievement. Nineteen studies were made of its effects on such things as interpersonal relationships in teaching, student attitudes in an elementary science methods course, the evaluative behavior of pre-student behaviors, student teacher classroom performance, and question-asking skills of preservice secondary science teachers.

III. Microteaching as a Basic Strategy in Educational Research and Development

Each research effort involving microteaching can be seen as contributing to the development of its research and training capability. The studies involving interaction analysis are obvious examples. Two pertaining to adult education and the minicourse reflect this also, as do more general articles by Aubertine and Shore.

IV. Description of Programs Using Microteaching

The majority of the articles reviewed fall most clearly into this category. As might be expected, teacher education has utilized microteaching frequently. Articles focused on such efforts as the use of microteaching for training science teachers in the use of alternate laboratory behaviors, the use of individualized instruction analysis, and experiments with closed circuit television. The use of videotape recordings for both modeling and feedback continues to be of interest to a variety of training programs. Training programs for teachers of culturally diverse children have adopted the concept, as have those in vocational education, open schools, and competency based business education. Use of it has been made for assessing the stability of social studies classroom verbal interaction, to field-test inservice training materials, in off-campus laboratory experiences, for change one year after training, and to assess the value of strategies designed to increase "creative hypothesizing."

After reviewing these articles, one is left with the impression that the flexibility of the components has not only permitted adaptation of microteaching to a wide variety of teacher education programs, but has actually encouraged such development. Microteaching can be readily adapted to a program's unique goals and situation without great administrative expense. Such seems to be the case in the nine articles about the use of microteaching in the preparation of foreign language teachers, in post-secondary education for training teaching assistants, and personal growth programs.

Surprisingly, only two articles dealt specifically with the technical skills of teaching. Further development of the skills may depend on more adequate formulation of them and/or the development of an organizing conceptual structure for all of the skills. To date, most of the work has been done in the area of application (the "D" of "R&D") through the minicourse project of the Far West Laboratory and through sixteen other abstracts on the minicourse.

V. Bibliographies, Concept Programs, Critical and Protagonists' Papers

Finally, twelve articles represent the kind of review and overview papers written recently about microteaching. Of particular note are Clift's effort to review the research on the use of videotape feedback, Manis' examination of research on microteaching's effectiveness in training programs, and the discussion by Sadker and Cooper entitled "What Do We Know About Microteaching?"

COMMENTS

Looking over the articles and papers as a whole, we were left with several impressions about the kind of work that has been done in recent years on microteaching and about the priorities for coming years.

1. It appears that microteaching has been adapted (and adopted) with the assumptions that the Stanford model is basically sound. Training programs (e.g. teach/reteach, use of model tapes of skills, supervision procedures) have made few changes in the basic definitions and pattern of the components. For example, the five-minute teaching session was used quite often, give or take three or four minutes. Five to ten minutes seem to be the acceptable limits, because there were no noticeable attempts to investigate alternative lesson lengths.

2. Inservice programs and materials which have had extensive development are preferred by teachers. Microteaching and minicourses are examples. They are also preferred because of their clinical practice components. It appears that careful research and development efforts are recognized and appreciated by teachers.

3. Training programs emphasize the skills of set, closure, and questioning. Research on questioning is emphasized, probably because it is at a more formative stage of development. Several studies explored its value as part of the Inquiry method in science laboratory activities.

4. The usefulness of microteaching to competency based programs was explored in several studies. Given the specificity of the technical skills and the opportunity to review teachers' behaviors so many times, such use is not surprising but nevertheless is pleasing--so long as the nurturant value to new teachers is not overshadowed.

5. The value of microteaching in helping people to learn more about their personal and professional behaviors is shown in studies involving such variables as self confrontation, self evaluation, and attending behaviors. Besides videotapes, the value to these programs may in part derive from the small samples of behavior obtained in microteaching sections.

SUGGESTED PRIORITIES

Experience with the development of microteaching and our familiarity with the recent research on the concept leads us to suggest several areas for future research.

As discussed earlier, there has been no systematic work either to validate individual technical skills of teaching or to provide an organizing conceptual structure for them. The lack of development in both areas

may explain in part the low number of studies involving the skills as either dependent or independent variables. These skills have been an important part of microteaching training programs because their specificity fits as well into the detailed training pattern of microteaching.

Another component which has not received significant attention involves the use of "real" students vs. peers as microteaching students. The Stanford microteaching training and research efforts always utilized secondary school students, and the demonstrated advantages of the programs may have been due to an important extent to this. Programs which must utilize peer feedback should be aware of its limitations, if any. For example, it may be that elementary teacher trainees can benefit from only two or three microteaching sessions where their peers role play different pupil ages, perhaps, for initial acclimation to the classroom. If this were the case, it would have important implications for investigating the way in which teachers adapt the technical skills of teaching to their own needs. Studies might reveal information on the process of adaptation and on the kinds of skill combinations or clusters which teachers develop. In this way, more could be learned about individual skills and the extent to which they are actually used (particularly over a long period of time) and about what skills seem to go best together. The use of teacher centers as places for inservice education may present a good opportunity for studies of inservice microteaching. Removed from the pressures and time constraints of the school, better analysis and even formal experimentation should be possible. The centers could be used for work with preservice students as well.

Finally, it would seem useful to examine the means by which teachers select, utilize, and modify various technical skills of teaching. Such professional decision making is undoubtedly as important as the skills in terms of classroom consequences. This area of research would probably be related to efforts to develop a framework for the technical skills of teaching.

SELECTION OF BIBLIOGRAPHIC ENTRIES

The research and development reports which follow were selected for their quality, uniqueness, and clarity of presentation. Our goal was to present a representative sample of those projects which have made an important contribution to the development of microteaching for research and for training. There has been a fairly steady development of projects in the past five years, as indicated by the number of abstracts for each of the following years:

1960 - 6	1973 - 27
1971 - 38	1974 - 19
1972 - 34	1975 - 20

The decline in the last two years may be attributed in part to the lag in getting articles accepted and added to the ERIC system.

The discussions used in the original ERIC entries have been used here, arranged in alphabetical order under each heading. Their overall clarity and succinctness made it unnecessary to revise them heavily. Entries without descriptions were not originally abstracted because their titles were seen to be sufficiently self-explanatory.

Because of the application of microteaching to a variety of educational programs, we felt that it would be useful to indicate the educational level, subject area, training level, and in some cases the national setting for the entry. Such information is indicated at the end of each entry, according to the following classification:

Level:	AE	=	Adult Education
	HE	=	Higher Education
	Sec	=	Secondary Education
	El	=	Elementary Education
	Ind	=	Industrial Education
	N	=	Not Specified
Subject Area:	Ed	=	Education
	PE	=	Physical Education
	AsTr	=	Assertion Training
	Eng	=	English
	SS	=	Social Sciences
	Mth	=	Mathematics
	FL	=	Foreign Languages
	Sc	=	Science and Science Methods
	Bio	=	Biology
	Rd	=	Reading
	EP	=	Educational Psychology
	Voc	=	Vocational
	Co	=	Counseling
	PTh	=	Psychological Therapy
	Sp	=	Speech
	HEc	=	Home Economics
	Ch	=	Chemistry
	Phil	=	Philosophy
	Bs	=	Business
	AV	=	Audio Visual
	NS	=	Not Specified
Training Level:	IS	=	In-Service
	PS	=	Pre-Service
	NS	=	Not Specified

Finally, we wish to acknowledge the assistance of Ms. Maxine Sitts and Ms. Linda McCloud in the final preparation of the document. Their patience and expertise have been of great help.

THEORY, RESEARCH, AND GENERAL

I. Research on Microteaching Versus Other Types of Teacher Training

Allen, W. Clayton. "Developing Manipulative Demonstration Skills Through Microteaching." Journal of Industrial Teacher Education 12; 3 (Spring, 1975) 28-36. [EJ118825]

A microteaching teacher-preparation strategy and the traditional instructional approach were compared. The complexities of a manipulative demonstration were broken down into identifiable and teachable skills. The greater effectiveness of the microteaching strategy was attributed in part to the reduced number of skills the student concentrated on in each lesson. (N. I. PS)

Cozine, Dean. Perceptions of the Acceptability of Teacher Training Products. Research and Development Memorandum No. 141. December, 1975. [ED118566]

The study was designed to find out what kinds of teacher training products were considered most useful by teachers. Twenty-one teachers were asked to evaluate 125 teacher training products divided into various sets by objectives and complexity of training mode and skills required. There was fairly strong agreement on what products were good, with preference going to those that involved microteaching or other clinical practice, varied activities, and complex skills and training. These products tended to be more expensive and to have produced at research and development centers. The methodology used to determine teacher attitudes toward teacher training products is considered an acceptable model for future research, and the authors hope research will be done to determine acceptability of the products after use by teachers. (N. NS. IS)

Schutte, Alfred John. An Exploratory Investigation of Micro-Teaching as a Pre-Service Technique and Its Evaluation, Using the Flanders System of Interaction Analysis. 1971. [ED064249]

The purpose of this study was to assess the effectiveness of microteaching as an alternative to the traditional observation-discussion method of supervising student teachers. It was found that student teachers who received the microteaching supervision significantly increased their acceptance of student ideas and the proportion of student initiated talk, and showed greater variability in verbal behavior, when compared to those who had received the conventional supervision. No differences were observed in I/D ratio. (Sec. Sc. PS)

Shea, Joseph. The Relative Effectiveness of Student Teaching Versus a Combination of Student Teaching and Microteaching. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, Illinois, April, 1974. [ED087782]

This experiment was conducted to determine whether pre-service teachers taking a combination of Minicourses and student teaching (the experimental group) would develop greater teaching skills than teachers taking only student teaching (the control group). It was found that, compared to the control group, experimental-group teachers repeated pupil answers less often, answered their own questions less often, and used more higher-cognitive questions in discussions. In tutoring sessions, they

used more diagnostic questions, verbal praise, demonstration techniques, and evaluation. The overall significance of this experiment is that it serves as a demonstration that microteaching as a specialized technique, and Minicourses as an adaptation of it, can be used effectively in training preservice teachers. (HE. NS. PS)

Wagner, A. C. "Changing Teaching Behavior: A Comparison of Microteaching and Cognitive Discrimination Training." Journal of Educational Psychology 64; 3 (June, 1973) 299-305. [EJ078964]

Thirty minutes of discrimination training was shown to be highly effective in changing teaching behavior while microteaching, that is, practicing teaching twice, reviewing the lesson on videotape, and receiving feedback, did not result in significant overall changes in teaching behavior. (N. NS. IS)

II. Research and Development on Various Aspects of Microteaching: Technical Skills, Different Configurations, Feedback

Acheson, Keith, et. al. The Effects of Two Microteaching Variations: Written Versus Videotape Modeling and Audiotape Versus Videotape Feedback. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, Ill. April, 1974. [ED088835]

An experiment compared the relative effectiveness of two microteaching procedures. In the low-cost treatment, student teachers received training in higher cognitive questioning skills by means of written modeling procedures (subjects read transcripts of videotape model lessons) and audiotape feedback after each microteaching session. The comparison group viewed videotape models and received videotape feedback. Comparisons of pre- and post-training tapes of teaching performance indicate that the variations are of equal effectiveness in increasing teachers' use of higher cognitive questions (average increase, from 35 percent to 57 percent) and length of student responses elicited by their questions. (HE. NS. PS)

Allington, Richard L. A Comparison of Taped Microteaching Performance and Teacher Test Achievement. Paper presented at the Annual Meeting of the Northeastern Educational Research Association, Ellenville, New York, November, 1974. [ED104677]

This study investigated the relationship between instructor ratings of taped microteaching performance and achievement on multiple choice examinations. Thirty graduate students enrolled in a reading methods course served as subjects. An analysis of the data indicated that no significant correlation existed between the variables. The viability of the taped minilessons as an alternative to the traditional paper-pencil assessment techniques is discussed. (HE. Rd. PS)

Casteel, J. Doyle, and John W. Gregory. A Cluster of Technical Teaching Skills--Acquisition through Microsimulation and Evaluation Through Microteaching. June, 1975. [ED107645]

This study was designed to investigate the degree to which skills may be learned and practiced through microsimulation and then used under microteaching conditions. Results of the investigation indicate that

those subjects who participated in this study employed four moves they practiced in a microsimulation setting in a microteaching situation. The practice moves include the following: (a) structuring moves, which provide context within which discussion is to be focused; (b) conditional moves, involving a given premise and a following consequence; (c) wait-time moves, involving teacher utilization of silence; and (d) indicative moves, involving teacher responses which relate directly to student utterances. Eight variables were used to compare the first micro-simulation with the microteaching situation. Subjects changed significantly from pretest to post-test on all variables in the directions hypothesized. The results also indicated that teachers may acquire, practice, and learn to use a cluster of technical teaching skills functionally through microsimulations of teaching. (HE. Rd. PS)

Cotrell, Calvin J., and Charles R. Doty. An Analysis of Face-To-Face, Video, and Remote Audio Feedback Techniques. Assessment of Microteaching and Video Recording in Vocational and Technical Teacher Education; Phase I, Final Report. June, 1971. [ED052325]

Presented in this report are the results of the feasibility testing of selected microteaching and video recording feedback techniques in a laboratory setting designed to simulate vocational teacher education. Volunteer teachers were selected and randomly assigned to three treatment groups in a repeated measurement design to compare the relative effectiveness of three different feedback techniques: (1) face-to-face conference, (2) face-to-face conference with video feedback, and (3) remote audio with video feedback. Twelve teachers, with four in each of the three groups, practiced the skill of introducing a lesson during five 5-minute teaching sessions over a period of 3 weeks and were evaluated by a panel of two judges. Variance analysis at the .05 level revealed no significant difference in performance among the groups over the series of teaching sessions. It was also found that the group receiving face-to-face conference with video feedback increased its performance on teaching session four, while the other two groups decreased their mean performance scores as compared to the mean scores for all groups on teaching session three. It was concluded that all feedback techniques were feasible for field testing, but modifications were recommended in the remote feedback technique. (N. Voc. IS)

_____. Assessment of Microteaching and Video Recording in Vocational and Technical Teacher Education: Phase II--An Analysis of Face-To-Face, Remote and Delay-In-Feedback Techniques. Final Report. September, 1971. [ED057189]

This is the second in a series of three tests of selected microteaching and video recording techniques designed to facilitate the identification of alternate ways to increase the effectiveness of vocational teacher education. The tests were conducted to develop feedback techniques in a laboratory under simulated teacher education conditions. This developmental effort further served as a screening device for the most promising techniques prior to seven demonstration and field testing activities which were part of the project, "Assessment of Microteaching and Video Recording in Vocational and Technical Teacher Education." With full cognizance of the limitations of the feasibility study, i.e., the

size of the sample and the number of simulated teaching sessions, several conclusions were reached. These include: (1) teachers may improve their performance on pedagogical skills as well under remote and delay-in-feedback techniques as they do under conventional face-to-face conference techniques, (2) the microteaching technique may be more beneficial than the particular feedback technique and used with it, and (3) the microteaching process was appropriate for testing the feasibility of the feedback techniques in a simulated vocational education program. (Sec. Voc. PS)

_____. Assessment of Microteaching and Video Recording in Vocational and Technical Teacher Education: Phase III--An Analysis of Instructional Model and Remote Feedback Techniques. Final Report. October, 1971. [ED057190]

This is the third in a series of three tests of selected microteaching and video recording feedback techniques in laboratory settings designed to simulate vocational teacher education programs. A comparison was made of the relative effectiveness of: (1)face-to-face supervision with video feedback, (2) remote supervision via video feedback which included a second sound track with the teacher educator's comments, and (3) remote supervision via video feedback augmented by instructional models for self-comparison. Three feedback groups, each consisting of four vocational teachers, practiced demonstrating a manipulative skill during seven 5-minute teaching sessions. Their lessons were evaluated by a panel of two judges using a critique form on demonstrating a manipulative skill. An analysis of the mean performance scores revealed no significant differences in effectiveness among the techniques, but it did reveal a significant change in the teachers' performance. It was concluded that the three feedback techniques were feasible methods for programs of vocational teacher education. (Sec.Voc.PS.)

_____. Assessment of Microteaching and Video Recording in Vocational and Technical Teacher Education: Phase IV--Classroom Application of Microteaching and Video Recording. Final Report. October, 1971. [ED057192]

This is part of a series of studies conducted to assess the use of microteaching and video recording as a feedback device in teacher education. Fourth in the series and the first field test, the study was designed to test two variations in the techniques, feedback and type of student taught in a distributive education methods class at the Ohio State University. As a result of this investigation, it was recommended that video feedback and teaching to high school students be included in the teaching practice sessions of the methods class and that teachers participating in such programs be given intensive training in the microteaching format. (Sec.Voc.PS.)

Douglass, James E., and Isobel Pfeiffer. "Changes of Supervisor Behavior in a Microteaching Practicum." Journal of Experimental Education 42; 2 (Winter, 1973) 36-41. [EJ093976]

This study examined outcomes of a superivision practicum in which graduate students supervised undergraduates in teacher education during microteaching activities and studied their supervisory behavior using videotape replays of conferences with teacher-trainees.(HE.NS.PS)

Hiscox, Suzanne B., and Adrian P. Mondfrans. Feedback Conditions and Type of Teaching Skill in Microteaching. Paper presented at the Annual Meeting of the American Educational Research Assn., Chicago, Ill., April, 1972. [ED064249]

This study was to determine the effects of audio and video tape feedback on both verbal and psychomotor skills when all other aspects of the Stanford microteaching model were controlled. Two experiments were involved, both consisting of two microteaching cycles--one for a verbal skill and the other for psychomotor skill. The first experiment emphasized evoking student-initiated questions and variation of the stimulus situation by the teacher. The second experiment emphasized silence and non-verbal cues and questioning techniques. Questionnaires, interviews with supervisors, and student evaluation of teachers provided data for analysis. Results indicated in general no difference in the effectiveness of audio and audio-video tape as forms of feedback for both verbal and psychomotor skills. (HE.EP.IS)

Hoerner, James L., et al. Assessment of Microteaching and Video Recording in Vocational and Technical Teacher Education: Phase V--Preservice Trade and Industrial Teacher Education. Final Report. October, 1971. [ED057193]

This report describes the fifth in a series of studies assessing microteaching and video recording in vocational and technical education. The 48 participants were randomly assigned to eight treatment groups which consisted of combinations of the two levels of the three major variables: (1) video feedback or no feedback, (2) teaching four 5-minute lessons or two 10-minute lessons, and (3) teaching high school students or teaching peers. The focus was on the effect of each of the variables on participants' teaching skills, the effect teaching high school students has on self-confidence in ability to teach, and the participants' attitudes and opinions regarding their experiences. No significant differences were found for or against any of the procedures tested except in the "t" test of gain in teaching skills; however, the attitudes and opinions of the participants reflected strong support for the use of video recording in preservice and inservice trade and industrial teacher education. (Sec.Voc.PS)

Horn, Jerry G., and Robert W. Wood. "An Interpretive Evaluation of a Program in Microteaching for Prospective Elementary Teachers." Teacher Educator 9; 1 (Autumn, 1973) 21-6. [EJ088705]

This study investigated the effect of the presence or absence of a Videotape recorder and the use of peer leadership versus supervisor leadership in critique sessions during the preservice training of elementary school teachers using microteaching. (El.NS.PS)

Illingworth, Bruce Leonard. Self- and Supervisor-Feedback in Microteaching by Pre-Service Teachers. 1971. [ED092312]

A major drawback in microteaching by preservice teachers is the limited availability of university supervisors to supply feedback regarding the microteaching performances. This researcher investigated the effectiveness of feedback supplied by the preservice teachers themselves. Thirty preservice teachers participated in the study. Each microtaught three times, with all performances being videotaped. The teachers were instructed to focus their efforts on the skill of effective questioning.

Groups were randomly assigned to include one with a university supervisor contributing feedback, one group having team members only, and the control group, receiving no feedback. A procedure for evaluating the lessons was outlined for use by the university supervisors and teachers. At the conclusion of the microteaching, the teachers were administered an attitude survey to detect differences resulting from the different feedback conditions. Judges rated the lessons for skill of effective questioning. Results indicated no significant differences between the treatment groups. The final mean pooled-judges ratings for the groups that received feedback were significantly higher than those of the control group. It was indicated that all groups accepted the microteaching technique. (HE.NS.PS)

Johnson, William D., and Jonathan E. Knaupp. "Trainee Role Expectations of the Microteaching Supervisor." Journal of Teacher Education 21; 3 (Fall, 1970) 396-401. [EJ025829] (N.NS.IS)

Leonard, W. Patrick. "Objective Performance Data in Microteaching Activities." Audiovisual Instruction 16; 3 (March, 1971) 66-7. [EJ034762]

Discussed are the means of recording a microteaching session (i.e., audio or video tapes) in terms of the ends the technique implies. (N.NS.NS)

Lerner, Michael Alan. The Effect of Selected Modes of Feedback on Teacher Behavior in a Microteaching Situation. 1972. [ED092326]

Reported is a study of the effect of selected modes of feedback on teacher behavior in a microteaching situation. Forty students enrolled in an elementary school science methods course participated in this study. One treatment group received verbal feedback from a trained observer. The second group received videotaped replays of their presentations. The third treatment group received both feedback modes. Four fifteen-minute microteaching sessions were scheduled at two-week intervals. Verbal feedback was supplied in terms of the Classroom Observational Record (COR). The taped lessons were encoded using the COR. Thirteen of the twenty-three categories identified were selected for analysis. No differential behavior modification occurred as a function of type of feedback provided. It was also inferred that the mode of feedback had no differential effect on the subjects' ability to use the processes of science, or on the subjects' attitude toward various aspects of teaching situations. (El.Sc.IS)

Pancrazio, Sally B., and William D. Johnson. Comparison of Three Teacher Training Approaches in Nonverbal Behaviors Which Encourage Classroom Interaction. Paper presented at the Annual Meeting of AERA, New York, 1971. [ED049198]

Seventy-four preservice teachers in home economics and social studies were videotaped during a 10-minute microteaching session prior to and after training. A training program in nonverbal behaviors related to encouraging classroom interaction was developed. Three training approaches to this program were constructed: programmatic videotape, lecture-discussion utilizing transparencies from the videotape, and practice in a microteaching setting. A Structured-Observation Inventory was also constructed to record the frequency with which selected nonverbal

behaviors were manifested prior to and after training during a 10-minute microteaching. A questionnaire to assess teachers' reactions to the training and microteaching was distributed after the last microteaching. Statistical analysis of the pre-post training data involved analysis of covariance methods by sex and training approach. Questionnaire data were tabulated and reported by percentages. There were no significant differences among training approaches or the frequency with which selected variables were manifested after training, and no significant differences between males and females. Groups trained by the programmatic videotapes and lecture-discussion perceived their training as more helpful than did those trained by practice. (N.HEc &SS.PS)

Perlberg, Arye, and Esther Theodor. Patterns and Styles in the Supervision of Teachers in Individual Conferences Following Classroom Observation. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, Ill., April 3-7, 1972. [ED083191]

This study demonstrates how the use of microteaching techniques allows for the collection of a wealth of comparable data about supervisory behavior in a relatively short time and under well-controlled conditions. (N.NS.NS.)

Sadker, Myra, and James Cooper. Modification of the Frequency of Student-Initiated, Higher Order Questions Through Microteaching and a Token Economy. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, Ill., April, 1972. [ED065468]

The purpose of this research was to analyze the effects of a teaching methodology on the question-asking behavior of elementary school children. A fifth grade social studies class was chosen as the site of this experiment. The teacher, aided by two interns, divided the class of 24 into three equal groups. The group controlled by the teacher was chosen as the subject of this experiment. Four of the eight students were selected for training in the asking of higher-order questions. The four selected students were presented with instruction and training in higher-order question asking through the microteaching procedure. The higher-order question-asking behavior of these four students was then reinforced in their social studies classroom through token economy. The results of this study indicate that students can be trained to increase higher-order question asking through the independent variable manipulations put into effect in this experiment. (El. SS. IS)

Stronck, David R. Lessons Taught by Students in Training to Become Biology Teachers Simultaneously Evaluated by Their Peers and by Their Students. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Los Angeles, California, March, 1975. [ED104677]

The objective of this study was to collect evaluations on instruction performed by student teachers and to compare the evaluations done by their peers with those done by their students. Another objective of this study was to consider changes in the evaluations when the first performance of student teachers was compared with their second performance. The study considered lessons taught by 58 students in 4 different semesters. The time between performances was four to six weeks.

The t-tests indicated highly significant differences between the evaluations done by the peers and those by the students, in the totals and in seven of the nine categories at the 0.001 level. In all categories, the students rated the performances of the student teachers as poorer than did peers. There were no significant differences between the ratings given by the students for the first performance compared with the second performance. Student teachers should recognize these significant differences between student and peer evaluations when they attempt to interpret evaluations from microteaching. (HE.Bio.PS)

Young, Jon I., et al. The Effect of Controlled Variables in Microteaching. 1971. [ED050557]

To gauge the effect of different microteaching variables on the effectiveness of microteaching, three treatment conditions were set up. In one group, oral evaluation by the supervisor was not available to the subjects (student teachers). In another, video recording or playback was not available. In the peer group, ninth-grade students, rather than fellow student teachers, were used as the "micro-class." Three regular microteaching groups served as controls for each treatment condition. Two evaluation forms, the Verbal Interaction Categories System and the Video Teaching Evaluation Form, were used to evaluate the performance of each student teacher in subsequent microteaching sessions. Results showed that only one variable, use of ninth-grade subjects rather than peers, significantly affected performance in subsequent sessions. In this condition, subjects were fairly uncomfortable with the task of teaching younger students and did not allow for student interaction during the microteaching sessions. Lack of oral or video feedback did not affect subsequent microteaching attempts. (N.NS.PS)

Modeling:

Brusling, Christer. Effects of Cued Modelling Procedures and Self-Confrontation in a Microteaching Setting Aimed at Developing Non-Verbal Behavior. Paper presented at the Symposium on International Microteaching, Tubingen, West Germany, April 10-16, 1972. [ED076533] (HE.NS.PS)

DeMarte, Patrick Jerome. The Effects of Microteaching on the Intentions, Perceptions, and Classroom Verbal Behaviors of Teachers of SCIENCE--A PROCESS APPROACH. 1971. [ED091143]

A pretest-posttest control group design was used with 20 second- and third-grade teachers to answer questions related to the effectiveness of microteaching as a teacher training procedure. The analyses allowed the following conclusions to be made: (1) elementary teachers trained by microteaching technique or by viewing perceptual models made significant changes in their intentions and perceptions of classroom verbal behavior; and (2) in their intention and self-perception of using criticism in classroom verbal behavior, teachers trained through microteaching differed significantly from those trained with perceptual models. (El.Sc.IS)

Eder, Michael D. A Study of the Effectiveness of the Videotape Recorder With and Without Modeling in the In-Service Training of Teachers. 1971. [ED053547]

A study was conducted to determine whether the use of a model enhances the effectiveness of videotape recorded microteaching sessions in changing the behavior of in-service foreign language teachers. It was found that the use of videotape recording with a model is significantly more effective than the use of videotape without a model in producing desired changes in teaching behavior. (N.FL.IS)

Reactions/Evaluations:

Chang, Ming Chu. Student Teacher Reactions to Microteaching. Paper presented at National Council of Teachers of English, St. Louis, Mo. April 8, 1972. [ED073092]

This research investigated student teachers' reactions to microteaching through the Teacher Reaction Questionnaire. The questionnaire contained 26 structured items, one comment and three open-end questions. Responses to the 26 structured items were statistically analyzed through principal-axes factor analysis and varimax rotation. The resulting six factors were discussed: (a) interactions between students and student teachers; (b) interactions between student teachers and supervisors; (c) student teacher preparation time for the 1st, 3rd, and last microteaching; (d) student teacher anxiety felt for the 1st, 3rd, and last microteaching; (e) student teacher general preparation for laboratory practice in relation to anxiety felt with the 1st microteaching; and (f) student teacher specific preparation for laboratory practice. The discussion concluded that (a) as actual microteaching increased, practice time decreased; (b) as practice time increased, anxiety decreased; and (c) as preparation for laboratory practice increased, anxiety remained unchanged. Student teacher interactions with both students and supervisors did benefit from microteaching. (N.Eng.PS)

Johnson, William D., and Pancrazio, Sally B. "Reactions of Students to Microteaching." Educational Television 3; 9 (Sep. 1971) 16, 21-22. [EJ047466] (N.NS.PS)

Pierce, Walter, and Halinski, Ronald. "An Evaluation of Microteaching Training Techniques Using Pupil Outcomes as the Evaluative Criterion." Contemporary Education 46; 1 (Fall, 1974) 45-50. [EJ108343] (N.NS.PS)

Experiments With Flanders and Other IA Systems and Microteaching:

Amidon, Edmund. Interaction Analysis and Supervision. Paper presented at Supervision of Instruction Symposium 2: Observation Systems and the Supervisor, January, 1972. [ED064799]

This paper describes a model that uses interaction analysis as a tool to provide feedback to a teacher in a microteaching situation. (El.NS.IS)

Amidon, Edmund J., and Rosenshine, Barak. Interaction Analysis and Microteaching in an Urban Teacher Education Program. A Model for Skill Development in Teaching. A paper presented at the Convention of the American Educational Research Association, Chicago Ill., February, 1968. [ED076496]

A new model for in-service and preservice teacher training programs has been developed. The Skill Development in Teaching (SKIT) was suggested by recent research combining two teacher training techniques developed in the past decade, Interaction Analysis and Microteaching. The proposed SKIT model is an attempt at combining significant aspects of the two techniques in a model for maximally effective skill training programs. (HE.NS.IS)

Campbell, Duane, and Minnis, Douglas L. "Inquiry, Microteaching and a Modified System of Interaction Analysis." Classroom Interaction Newsletter 5; 2 (May 1970) 40-45. [EJ037292] (N.NS.PS)

Casteel, J. Doyle, et al. The Social Science Observation Record, a Theoretical Model Relevant to Value Clarification in Mathematics, Science, and Social Studies. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, Ill. April 1974. [ED093959]

The Social Science Observation Record is a systematic observation system. When used to provide feedback to preservice social studies teachers participating in a teacher-reteach microteaching sequence, subjects obtained a significant increase in value-oriented student behavior. When used to analyze printed transcripts of mathematics teachers, teacher-student categories of the system were found to be related to the relative frequency with which teachers used conditional reasoning moves. When used to analyze the performance of preservice science teachers involved in microteaching, the teacher-student categories were found to be associated with growth in the frequency of probing questions. The implications are that (1) similar profiles result from different training approaches, (2) the effects of component skills on student verbal patterns can be analyzed, and (3) it appears probable that mathematics, science, and social studies teachers can learn to recognize and evoke similar valuing operation from students as a result of microteaching experiences. (N.Sc,Mth,SS.IS&PS)

Donlan, Dan. "Observed Versus Unobserved Behavior in Three Types of Microteaching." Phi Delta Kappan 55; 10 (June 1964) 707-708. [EJ099433]

Compares the effectiveness of videotapes, audiotapes, and Flanders Interaction Analysis, in microteaching. (N.NS.NS.)

Perlberg, Arye, et al. The Combined Use of Focusing on a Specific Skill and TDS Feedback, Help or Hindrance in Improving Teacher Training: A Three Year Study. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, Ill. April, 1974. [ED093981]

One hundred and forty-eight student teachers from Israel Institute of Technology were subjects of an experiment investigating effectiveness of microteaching alone as compared with a category observation system as a training method, and interaction between the two when combined. Analysis of covariance results lead to the conclusion that while micro-

teaching improves simple technical skills, TDS feedback of the entire lesson produces better results in achieving higher level objectives, even better than the combined use of the two systems. (HE.NS.PS-Israel)

Verbal and Non-Verbal Behaviors in Microteaching:

Ehman, Lee H. Stability of Social Studies Classroom Verbal Interaction Patterns Across Repeated Microteaching Performances. Paper presented at the Annual Meeting of the National Council for the Social Studies, Boston, Mass., November, 1972. [ED076451]

Specific teaching tasks important in social studies instruction are described in terms of preservice teachers' classroom verbal behavior which occurred in a teaching laboratory, and the stability of individual preservice teachers' behavior while teaching two similar lessons involving a specific task are described and analyzed. Three elements chosen for study are: (1) teaching one or more social studies concepts; (2) eliciting student hypotheses in response to a problem situation; and (3) promoting student analysis of a values proposition or controversial issue. Through emphasis on these specific elements of social studies teaching an inquiry model of teaching is suggested. (N.SS.PS)

Raymond, Anne F. An Analysis of Nonverbal Behaviors Exhibited by Two Groups of Science Student Teachers. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, Detroit, Mich. March, 1973. [ED089945]

Reported is a study to investigate the effectiveness of an instructional technique designed to enable preservice students enrolled in science methods courses to acquire skill in the use of nonverbal cues and the use of silence. The vehicle for skill development was microteaching involving the use of peers as pupils for practicing the skill of set induction and of students at a local junior high school for the skill of probing questioning. Analyses of data revealed that (1) student teachers who had practiced the use of nonverbal cues did devote significantly more time to nonverbal behaviors during student teaching; (2) there were no significant differences in the use of congruent behaviors exhibited by the experimental group during student teaching as compared to the control group; (3) teachers in the experimental group exhibited significantly more positive nonverbal interactions with their students; and (4) the pupils of the student teachers did not perceive the members of the experimental group as being more effective than those of the control group. (Sec.Sc.PS)

Personality Correlates:

Austad, Charles A., and Emmer, Edmund T. Personality Correlates of Teacher Performance in a Microteaching Laboratory. May, 1970. [ED049160]

This study attempted to improve the results of correlating personality characteristics with teaching behavior within the setting of a microteaching laboratory. (N.NS.PS)

Edwards, Clifford H. "Personality Correlates of Microteaching Performance: A Function of Instructional Strategy." Illinois School Research 11; 1 (F. 1974) 1-13. [EJ105299]

The purpose of this study was to determine if relationships do exist between personality variables and specific microteaching skills. (N.NS.NS)

Freeman, Jeanne, and Davis, O.L., Jr. Relationships of Self-Concept and Teaching Behaviors of Secondary Teacher Candidates in Microteaching. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, Ill. April, 1974. [ED095187]

Self-concepts of teachers and student teachers have been found to predict certain specific teaching behaviors. This study explored these possible relationships in the microteaching setting. Self-Report Inventory and OScAR measures were obtained on 51 students, all secondary teacher candidates. Correctional and ANOVA procedures yielded only a few significant results. The inadequacy of self-concept measures to relate significantly to microteaching performance is clearly revealed. Explanations of these findings are set in the context of both self-concept theory and teacher education program development and research. (Sec.NS.PS)

Effects of Microteaching and/or Videotape on Student Teacher Behavior and Student Achievement:

Copeland, Willis D. "The Relationship Between Microteaching and Student Teacher Classroom Performance." Journal of Educational Research 68; 8 (April 1975) 289-93. [EJ123558] (N.NS.PS)

Emmer, Edmund T., and Millett, Gregg B. An Assessment of Terminal Performance in a Teaching Laboratory: A Pilot Study. August, 1968. [ED055981]

This study evaluated the effects of a sequence of microteaching tasks on the teaching behavior of secondary education students. Analysis of the final performance lessons indicated that the experimental group was rated significantly higher than the control group on three of four teaching dimensions (determining readiness, motivating, evaluating); there was no difference on the dimension of clarifying objectives. Behaviorally, the experimental group had significantly greater amounts of use of student ideas, questions, directions, student response and student initiation. The controls used more lecture. (Sec. NS.PS)

Gall, Meredith, et al. Improving Teachers' Mathematics Tutoring Skills Through Microteaching: A Comparison of Videotape and Audiotape Feedback. Paper presented at the Annual Meeting of the American Educational Research Association, February, 1971. [ED049034]

Discussed is a research project designed to measure the relative effects of audiotape versus videotape feedback in a microteaching situation. Teachers were randomly assigned to one of three groups: audiotape feedback, videotape feedback, control. The teachers in the two

feedback groups participated in an instructional sequence on microteaching procedures which involved about 13 hours of instruction in a four-week period. Teachers were asked to conduct tutoring sessions before and after the training sequence. Videotapes of these sessions were rated for the teacher's use of diagnostic questions, demonstration techniques, evaluation examples, practice phases, and verbal praise. The results indicate that videotape and audiotape feedback are generally equally effective in producing gains in these tutoring skills. (N.Mth.IS)

Hinckley, William L. Effects of Two Styles of Microteaching on Student Teaching Performance. Final Report. August, 1972. [ED072024]

Microteaching has been widely used in the training of high school teachers for the past several years. In some cases, trainees have taught actual secondary students in the microteaching situation. In other cases, the trainees have played the role of students in a peer-teaching mode of microteaching. This study compared the real and peer-teaching modes of microteaching in relation to subsequent teaching success. It was hypothesized that teacher trainees who taught actual secondary school students in microteaching would be rated higher on "teacher-pupil rapport" and "pupil participation and attention" than the peer-teaching group. Ratings were made on the Stanford Teacher Competence Appraisal Guide by 2,306 secondary school students in northwest Missouri and southwest Iowa schools. No significant differences between mean ratings of the two groups were obtained on any of the 13 items listed on the Appraisal Guide. It was concluded that peer teaching is a viable alternative microteaching procedure for teacher-trainees with the same cultural background. (Sec.N.PS)

Jensen, Larry C., and Young, Jon I. The Effect of Televised Simulated Instruction on Subsequent Teaching (no date available).[ED053071]

This study found that microteaching experience significantly improved subsequent performance of student teachers on five of six specific factors derived from the Teacher Performance Evaluation. Data obtained from the TPES were factor analyzed resulting in six subscales: (1) personality traits, (2) warmth of teacher behavior, (3) general classroom atmospheres, (4) lesson usefulness, (5) teacher interest in pupils, and (6) teacher interest in student achievement. Results from analysis of variance showed that subjects with microteaching experience received significantly higher ratings on the first five factors. Several interactions with the time variable were also noted with the general trend being toward greater difference between groups at the end of student teaching. (Sec.NS.PS)

Johnson, William D., and Pancrazio, Sally B. The Effectiveness of Three Microteaching Environments in Preparing Undergraduates for Student Teaching. Paper presented at the Annual Meeting, AERA, New York, 1971. [ED051098]

Three microteaching formats were compared: microteaching with peers, with university freshmen, and with high school pupils. Thirty social studies methods students were assigned to one of the three formats for six experiences. Each experience included periods of instruction and practice. Assessments were made at the end of microteaching by a panel

of graduate assistants using the Illinois Teacher Performance Appraisal Scales, and at the end of student teaching by pupils using the Illinois Teacher Evaluation Questionnaire. Significant differences at the completion of microteaching favored peer teaching, but microteaching with high school pupils was associated with superior performance at the end of student teaching. It appears easier to obtain desired training effects through peer teaching, but these effects do not seem to transfer to student teaching. (Sec.SS.PS)

Legge, William B., and Asper, Lois. "The Effect of Videotaped Microteaching Lessons on the Evaluative Behavior of Pre-Student-Teachers." Journal of Teacher Education 23; 3 (F. 1972) 363-66. [EJ066772] (N.NS.PS)

McDonald, Frederick, et al. The Relation of Teacher's Questions in Microteaching and Microcourses to Student Achievement and Rating of the Teacher. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, February, 1973. [ED076571]

This study analyzed the relationship between the kinds of questions asked during a microteaching session and the achievement of students subsequently taught under classroom-like conditions. Teachers taught the same topics in microteaching; each taught a 2-week course 6 weeks later. Each question asked was classified in one of eight categories. The categories identified the question by its cognitive complexity, immediacy to the student, and source of verifiability. No single type of question was associated systematically with achievement; different types of questions predicted achievement in a topic by subject by question interaction. (N.NS.IS)

_____. A Behavior Modification View of Video Playback: Microteaching. Paper presented at Annual Meeting of AERA, New Orleans, February, 1973. [ED076561]

Social learning theory is the theory that is applied through microteaching. The two critical sets of social learning variables mediated through microteaching are those associated with modeling and feedback. Microteaching is also a way of bringing specific teaching responses under control, experimentally and behaviorally. Thus in each microteaching session, the learner emits teaching responses which are reinforced through videotape feedback or are elicited by viewing teaching behavior which is modeled in videotape presentation. The purpose of research using microteaching which mediate these variables is to determine the optimum combination of modeling and feedback which strengthens specific categories of teaching responses. Some interactions between type of response to be learned and type of treatment, modeling or feedback, have been found. Modeling has been found more effective than feedback when the modeling cues are highly discriminative. Feedback appears most effective with easily observed and reinforceable teaching behaviors. (N.NS.NS.)

Perlberg, Arye, and Kremer, Lya. The Use of Microteaching Techniques to Train Student-Teachers in Stimulating Learners' Questions. Paper presented at Annual Meeting of AERA, April, 1972. [ED065496] (Sec.NS.PS)

Perrott, Elizabeth, et al. "Changes in Teaching Behavior After Completing a Self-Instructional Microteaching Course." Programmed Learning and Educational Technology 12; 6 (November, 1975) 348-362.[EJ131246](N.NS.IS)

Peterson, Terrance L. "Microteaching in the Preservice Education of Teachers: Time for Reexamination." Journal of Educational Research 67; 1 (Sep. 1973) 34-6. [EJ082311]

The purpose of this study was to investigate the effectiveness of microteaching in developing the actual classroom use of twelve questioning skills when used immediately prior to a student teaching experience. (E1.NS.PS)

Smith, Walter Scott. The Effect of Alternative Types of Instruction on the Learning of a Question-Asking Skill by Preservice Secondary Science Teachers. 1973. [ED114252]

The purpose of this investigation was to study the effect that four alternate types of instruction had on the frequency with which high inquiry questions were asked by preservice secondary science teachers. High inquiry questions involve comparing, explaining, conditional inferring, and evaluating. The four alternative instructional treatments were: placebo, classification, planning, and both classification and planning. Among results, data revealed that all treatment groups increased their frequency of high inquiry questions. (Sec.Sc.PS)

Sparks, Rebecca L., and McCallon, Earl L. "Microteaching: Its Effect on Student Attitudes in an Elementary Science Methods Course." Science Education 58; 4 (October-December, 1974) 483-87. [EJ113234] (HE.Sc.IS)

Turney, Mildred I. A Comparison of Varied Time Periods of Microteaching in the Development of Interpersonal Relationships in Teaching. Final Report. December, 1969. [ED054078]

Findings indicated that if the number and length of microteaching lessons were increased, one could expect student teachers to increase competence in establishing and maintaining student verbal expression in the classroom. (Sec.NS.PS)

III. Microteaching as a Basic Strategy in Education R & D, Developing New Teacher Training Materials and Other Levels of Inquiry

Aubertine, Horace E. The Renaissance of the Laboratory Schools. Paper presented at the National Association of Laboratory Schools Conference, Chicago, Ill., February, 1972. [ED073086]

This report discusses the conditions for the renaissance of the laboratory schools, including the discovery of the principle of semi-conductors as electronic amplifiers, new advances in statistical methods of measurement, the development of microteaching, and the use of the accountability movement which in turn provides impetus for competency based teacher education. This resurgence of laboratory schools was facilitated by a willingness to let go of the past, an analysis of existing resources and capabilities in terms of strengths and weaknesses, and a willingness to recognize that some new things will fail.(N.NS.NS)

Bartley, Diana. Staff Development Microteaching Workshop in Adult Basic Education-TESOL: A Region V Project. Final Report. 1973.[ED090417]

The immediate purpose of the 1973 tri-state (Illinois, Indiana, Wisconsin) Adult Basic Education workshop, a Teachers of English to Speakers of Other Languages project, at the University of Wisconsin-Milwaukee (four and one-half days) was the training or retraining of teachers in English as a second dialect or English as a foreign language to adults with an educational equivalency of eighth grade or less. The workshops involved 35 participants in a program sensitizing them to the linguistic factors as well as the social conditions which make up their teaching environments. Microteaching sessions formed the core of the workshop. Also offered were lecture-discussion sessions and seminars. The workshop program applied the national program's seminars in applied linguistics, history, and culture to a regional level. Evaluation indicated the workshop to be a successful and satisfying experience. Future modifications seemed to be directed toward creating a more practical cultural workshop. (HE. Eng.IS)

Shore, Bruce M. Microteaching: A Brief Review. 1972.[ED066863] (N.NS.NS)

_____. "Microteaching: It's Not Just Another Gimmick." Education Canada 12; 1 (March, 1972) 16-20. [EJ056855]

Descriptions of the main features of microteaching and some suggestions on how the micro-lesson can help those who are studying teaching. (N.NS.PS)

Vaidya, N. "Microteaching." Teaching 43; 2 (December, 1970)57-63. (N.NS.NS)

IV. Description of Programs Using Microteaching Including Specific Materials, Manuals

Teacher Education:

Altman, Burton E., and Williams, Eugene E., Eds. Monday Morning. Humanistic Teaming with Student Teachers. 1973.[ED080448]

This anthology of articles and reports on micro-team teaching reports the findings of a research study evaluating a preservice phase of teacher training programs, and presents viewpoints about micro-team teaching's potential. (HE.NS.PS)

Andersen, Dan W., and Antes, John M. "Microteaching for Preparing Teachers of Culturally Diverse Children." Elementary School Journal 72; 3 (December, 1971) 142-149. [EJ052068] (El.NS.PS)

Appleton, Frederic C. "Microteaching Research and Its Limited Application in the Philippines." Asian Institute for Teacher Educators Newsletter 6; 3 (Jan. 1972) i-vi. [EJ057747] (N.NS.NS.)

Boeck, Marjorie A. Stability of Behavioral Change--One Year After Precision Microteaching. Paper presented at the Annual Meeting of the AERA, Chicago, Ill., April, 1972. [ED065470]

Results of this follow-up study indicated that changes in teacher high-level questioning behavior and classroom interaction patterns (rates of pupil and teacher talk) resulting from the use of operant methodology in a microteaching setting were maintained during the student teaching experience a year later. (Sec.Sc.PS)

Ciampa, Bartholemew J. VTR...Education's Benevolent Humility Device (no date given). [ED055970]

The use of television videotape equipment is an effective shortcut in replacing the inexperienced undergraduate concept of teaching as a 'gut' experience with a realistic concept of teaching; it nurtures humility without subjecting the student to humiliation. (Sec.NS.PS)

Copeland, Willis D., and Doyle, Walter. "Laboratory Skill Training and Student Teacher Classroom Performance." Journal of Experimental Education 42; 1 (Fall, 1973) 16-21. [EJ090547] (N.NS.PS)

Doty, Charles R. "Microteaching: Applications to Vocational and Technical Education." Journal of Industrial Teacher Education 10; 3 (Spring, 1973) 43-53. [EJ081545] (N.Voc.NS.)

Edwards, Clifford H. "Changing Teacher Behavior Through Self Instruction and Supervised Micro Teaching in a Competency Based Program." Journal of Educational Research 68; 6 (February, 1975) 219-22. [EJ113409] (N.NS.NS)

Ehman, Lee H. Stability of Social Studies Classroom Verbal Interaction Patterns Across Repeated Micro-Teaching Performances. Paper presented at the Annual Meeting of the National Council for the Social Studies, Boston, Mass., November, 1972. [ED076451]

Specific teaching tasks important in social studies instruction are described in terms of pre-service teachers' classroom verbal behavior which occurred in a teaching laboratory, and the stability of individual pre-service teachers' behavior while teaching two similar lessons involving a specific task are described and analyzed. Three elements chosen for study are: (1) teaching one or more social studies concepts; (2) eliciting student hypotheses in response to a problem situation; (3) promoting student analysis of a values proposition or controversial issue. Through emphasis on these specific elements of social studies teaching an inquiry model of teaching is suggested. (N.SS.PS)

Gilbreath, Allie Lou Felton. Off-Campus Laboratory Education. Paper presented to 2nd Annual Meeting of the Clemson Reading Conference, Clemson College, South Carolina, September, 1971. [ED061151] (N.EP&Phil.PS)

Gray, Charles E., and Youngs, Richard C. Instructional Strategies for Creative Hypothesizing: A Training Program. Final Report. August, 1971. [ED054040]

The purpose of this two-year research project at Illinois State University was to develop a concise training program designed to enhance the ability of teachers to facilitate problem-solving behaviors on the part of elementary and secondary school pupils, with particular emphasis on creative hypothesizing. Specifically, the program was designed to alert teachers to the importance of instruction for creative problem solving, provide them with a sound rationale, and equip them with a repertoire of appropriate teaching strategies and skills. A concise instructional sequence was developed by means of a sequential training instruction feedback revision cycle. Teacher Education students in a junior year participation program were the experimental subjects. It involved direct presentation of content, demonstration of process, analysis of progress, modeling, and micro-teaching. It dealt with establishing classroom climate, thinking activities based on the Structure-of-Intellect model, brainstorming, attending to the problem, examining the problem from various vantage points, and included techniques for peer and leader evaluation of micro-teaching experiences. (El.&Sec. NS.IS)

Gregory, Thomas B. Encounters with Teaching: A Microteaching Manual. 1972. [ED073068]

This manual introduces teaching strategies into teacher education through microteaching. The four basic divisions in the manual are microteaching concerns, process concerns, affective concerns, and personal concerns. The first section deals with the use of micro-teaching in the teaching laboratory, stressing the importance of feedback for teacher self-evaluation. The second section presents sets of problem-solving strategies which taught students to formulate questions and seek answers to them. The third section provides a set of teaching laboratory activities to develop and enhance affective teaching skills. The last section contains a teaching task which was evaluated by the teacher. This last microlesson enabled the teacher to assess the changes in his teaching behavior. (HE.NS.PS)

_____. "Microteaching in a Preservice Education Course for Graduates." British Journal of Education 2; 1 (January 1971) 24-32. [EJ042647] (N.NS.PS)

Guelcher, William, et al. Microteaching and Teacher Training: A Refined Version. June, 1970. [ED050017]

The development of the dynamic skills approach at the University of Chicago as contrasted with the component skills approach to Stanford has shifted microteaching out of the "practical problems" arena and into a more central position between theory and practice. The Stanford model included three stages: general orientation, viewing of skill films, and the teach-supervision-reteach microteaching cycle itself. Often there has been no significant improvement between teach and reteach. After re-analysis and the decision that the basic weakness stemmed from the lessons used by the teachers not being sufficiently

thought out, five stages were added between the initial orientation phase and the culminating experience of actual microteaching: (1) The Practicum--designed to show how a good lesson established expectations for student response and that the teacher could expect specific types of response if the questions were clear, the decision logically consistent, and the task generally applicable to something in the child's own experience; (2) Peer Group Microteaching--opportunity to test one of several lessons against peers and under peer supervision; (3) Seminar in Supervision of Microteaching--to train students to supervise their fellow teaching candidates; (4) Skills Session in Microteaching--a seminar on the nature of skills as dynamics of the lesson; (5) Pre-Teach Supervisor-Supervisee Conference--about the lesson to be taught. (N NS.NS)

Hughes, P. W., and Truill, R. D. "Simulation Methods in Teacher Education." Australian Journal of Education 19; 2 (June, 1975) 113-26. [EJ130465] (N.NS.NS)

Jesson, C. K. "An Economic Use of Micro-Teaching Techniques to Achieve Objectives for a Basic Course in Learning Resources." Programmed Learning and Education Technology 11; 2 (March, 1974) 87-96. [EJ098193] (HE.AV.IS)

Lawless, C. J. "Microteaching Without Hardware Developments at the University of Malawi." Teacher Education in New Countries 12; 1 (May, 1971) 53-63. [EJ041705] (HE.NS.PS)

Meiss, Jack L. An Experimental Project to Develop Evaluation Criteria for Competency-Based Instruction Through Video Recording and Microteaching Techniques Within the Student Teaching Experience in Business Education with Special Emphasis in Typewriting. 1974. [ED106293]

The intent of the project was to determine the feasibility of incorporating educational innovations within the Business Education Student Teaching Program in order to begin to solve instructional and evaluative problems. Results of the project include the following: (a) a professional semester suited to unique local conditions, (b) development of procedures and evaluative criteria in the use of microteaching techniques and video processes for evaluating student teaching performances, with special emphasis on competency-based teaching behaviors, and (c) creation of two observation rating forms for use in microteaching sessions and two observation rating forms for competency-based teaching/learning behaviors, which facilitate evaluation of knowledge and performance competencies that are applicable to all levels of education. (N.Bs.PS)

Naeslund, Jon. "Experiments With Closed Circuit Television." School Research Newsletter (November, 1972). [ED073631]

An experiment to determine the suitability of microteaching to teacher training in Sweden has been conducted since 1970. The newsletter reviews the three phases of that experiment and discusses some of the preliminary results. (N.NS.NS)

Nias, Jennifer. "Teacher Education for Open Schools." Elementary School Journal 76; 1 (October, 1975) 40-51. [EJ131418]

Describes microteaching and interaction analysis and discusses why these may not be appropriate to use with student teachers preparing to work in an open education setting. (El.NS.PS)

Northeast Missouri State College. Instructional Technology in an Innovative Program of Preservice and In-Service Laboratory Experiences. 1971. [ED067376]

This college developed a Teaching Skills Center providing a program of early professional laboratory experiences for all elementary and secondary education majors. The program includes four components: audiovisual utilization, instructional materials preparation, microteaching, and actual school experience. Each training component festures a sequence of low risk performance-oriented experiences designed to heighten the prospective teacher's readiness for the high risk challenges of student teaching. The training sequence of the microteaching laboratory stresses performance competencies in specific teaching skills as motivating and reinforcing, introducing and closing lessons, developing lessons, obtaining and maintaining attending behavior, analyzing and managing interaction, and making assignments. The school experience sequence enables the student teacher to observe and participate in elementary and secondary classrooms. Evaluation of the program concerned staff morale, trainee participation and reaction, reaction of methods students and their professors, perception of readiness, reaction of school personnel to the in-service clinical training program, assessment of special services, and feedback from the schools. (El & Sec.NS.IS & PS)

Olmo, Barbara G. "Variation on a Microteaching Theme." Improving College and University Teaching 23; 1 (Winter, 1975) 42-43. [EJ112838] (HE.NS.PS)

Perlberg, Arye. "Microteaching." International Review of Education 18; 4 (1972) 547-60. [EJ073247] (N.NS.PS)

_____ et al. Modification of Teaching Behavior Through the Combined Use of Microteaching Techniques with the Technion Diagnostic System TDS. 1973. [ED079436] (HE.NS PS)

Pfeiffer, Isobel, and Reighard, Rick. "Micro-Teaching Practicum in Teacher Education." Educational Technology 11; 12 (December, 1971) 42-44. [EJ050580] (HE.NS.PS)

Rector, Douglas, et al. A Field Test of the Effectiveness of One of the Utah State University Protocol Training Materials, In an Inservice Workshop Setting. Paper presented at the Annual Convention of the Northeastern Educational Research Association, Boston, Mass., Nov. 1972. [ED075341]

The teaching protocol Encouragement, which emphasizes simple verbal praise, specific praise, and the use of student ideas for motivational reinforcement, was selected for testing. The protocol was tested in a

2-week graduate workshop to determine the extent to which a group of experienced teachers could, upon completion of the protocol training module, demonstrate the skills and behaviors emphasized in a peer-microteaching lesson. Pre- and posttest behaviors were categorized according to conventions developed at the Far West Laboratory. Results indicate that this group of teachers was able to demonstrate the acquired use of the three encouragement skills stressed in the protocol to a significant degree in a microteaching peer-teaching demonstration lesson. (HE.NS.IS)

Rezba, Richard James. Preparation of Pre-Service Science Teachers in the Use of Alternate Laboratory Teacher Behaviors. 1971. [ED110269]

An attempt was made to develop an appropriate teaching model to aid prospective science teachers in acquiring teaching skills and behavioral patterns appropriate for inquiry-oriented laboratory activities and experiments. Data were collected from two groups of secondary science methods students on their verbal behavior while in the role of laboratory instructor during microteaching sessions. Verbal behavior of experimental group 1 was recorded before and after instructional treatment. For group 2 verbal behavior was recorded on two occasions following treatment. Treatment consisted of a printed model of behaviors, and a perceptual model employing these laboratory teacher behaviors. Major conclusions drawn include: (1) the instructional treatment caused a significant increase in use of indirect verbal behaviors on 10 of 14 indirect criterion variables for group 1 and significantly decreased the use of lecture; (2) none were found for group 2, indicating a high degree of stability of participants' verbal patterns following treatment. There were significant differences attributable to high and low flexibility, as measured by the Philosophic-Mindedness Scale, on one criterion variable for group 1 and on three for group 2. (Sec.Sc.PS)

Seaton, Hal, and Maola, Joseph. "Microteaching: A Proposal for Manpower Development and Training Improvement." Journal of Employment Counseling 11; 2 (June, 1974) 85-88. [EJ099032]

Microteaching, using videotape equipment as a training aid, may enhance the skills and effectiveness of trainees in Manpower Development Training Centers, allows the trainee to learn through manipulative experience and to receive immediate feedback regarding his performance, and provides program coordinators with a means of evaluating the efficiency, effectiveness, and utility of the center and its facilities as well as providing a starting point for trainee improvement. (N.NS.NS)

Short, Murray, Ed., and Rozum, Mary, Ed. Microteaching: A Technique for Training Teachers to Teach Elementary Children. 1972. [ED076548]

A program report on the Metcalf Microteaching Project at Illinois State University, 1969. The report details the program (college students acted as participant teachers), teacher observation, and evaluation. Benefits of the program are also noted: microteaching acted as a reinforcer of classroom work, it gave additional opportunities to less able students, and it provided interests in new subject matters. The report discusses problems with the program, including pupils missing

part of their regular classes and the lack of correlation between microteaching lessons and lessons being taught at the elementary school. (HE.NS.PS)

Stukat, Karl-Gustaf. "Microteaching." School Research Newsletter, 1972. [ED073630]

This newsletter reviews two experiments in Microteaching that were conducted in Sweden. The first experiment sought to determine whether microteaching was appropriate for teacher training. Using a factorial design study, the investigators concluded that microteaching did not have any long term effects on the teachers. The second experiment was designed to allow student teachers to distinguish "effective" from "less effective" teacher behavior. Flanders' interaction analysis was taught to the student teachers so that they could evaluate themselves on videotape. The results showed positive attitudes to self confrontation. (HE.NS.PS)

Wood, Robert W., and Wess, Roger. "A Program in Microteaching for Prospective Elementary Teachers." Supervisors Quarterly 6; 1 (Fall, 1970) 24-28. [EJ028541] (El. NS. PS)

Teacher Education: Foreign Language:

Altman, Howard B., and Ramirez, Arnulfo G. "Beyond Micro-Teaching: Some First Steps in Individualizing Pre-Service Training for Foreign Language Teachers." Modern Language Journal 55; 5 (May, 1971) 276-280. [EJ036762] (N.FL.PS)

Bartley, Diana. Practice-Centered Teacher Training for TESOL. Paper presented at Annual Meeting of the PNCFL, Spokane, Wash., 1974. [ED102837]

The 1971 and 1972 summer institutes in Adult Basic Education--TESOL (ABE-TESOL) held at the University of Wisconsin at Milwaukee are described. The purpose of the institutes was to train experienced teachers of adults who speak either a foreign language or a nonstandard dialect of English and who have achieved the educational equivalence of eighth grade or less. The teachers were trained in contemporary theories and methodologies in a practice-centered teacher training program based on in-circuit television and microteaching. There were three basic components of the institutes: (1) the seminars and workshops; (2) the microteaching, and (3) conferences with community consultants. (HE.FL.PS)

_____ and Di Pietro, Robert J. "Microteaching and ABE-TESOL: A Model Program." American Foreign Language Teacher 4; 1 (Fall, 1973) 15-16, 37. [EJ087954]

Describes a model summer institute for training teachers of English as a second language in adult basic education and the use of microteaching as a method for presentation of instructional materials. (NS.FL.PS)

Beattie, N. M., and Teather, D. C. B. "Microteaching in the Training of Teachers of Modern Languages: Some Preliminary Comments." Audio-Visual Language Journal 9; 3 (Winter, 1971) 117-121. [EJ050730] (N.FL.PS)

British Council, London, England. Training Teachers of English as a Second or Foreign Language. Specialised Bibliography. 1973. [ED115094] (N.FL.PS)

Carver, David, and Wallace, M. J. "Some Applications of Micro-Teaching to TESL." English Language Teaching Journal 29; 3 (April, 1975) 184-190. [EJ116122] (N. FL. IS)

DeLorenzo, William E. "Microteaching as a Transitional Technique to Student Teaching." Foreign Language Annals 8; 3 (Oct. 1975)239-245. [EJ124335] (HE.FL.PS)

Probst, Glen Weston. Overview of an Activity-Referenced Foreign Language Methods Course. 1974. [ED102845]

This paper offers suggestions about the content and organization of a foreign language methods course. It begins with a list of basic teaching skills that must be taught: (1) directing a pattern drill, (2) teaching a concrete word, (3) teaching an abstract word, (4) teaching a short dialogue, (5) teaching a contrastive structure in morphology and syntax, (6) developing and using grammatical generalizations, (7) teaching the initial steps of reading, and (8) presenting culture capsules. The methods course described here is divided into three phases. The first phase has the student micro-teaching his peer group. During the second phase the methods students micro-teach students of high school or junior high school age. The final phase puts the methods student in an authentic practice-teaching situation at the college level. After each phase an oral self-evaluation is solicited from each student teacher, and the members of the class just taught are also asked to give feedback about the methods student. Several other activities that might be included in the methods course are recommended here: (1) materials evaluation, (2) constructing learning activity packets, (3) writing tests, (4) working with interaction analysis, (5) employing the media, (6) developing visual packages, (7) writing instructional objectives, (8) student projects, and (9) lectures by professionals in the field of education. (HE.FL.PS)

Wolfe, David E. "The Direct Experiences of Microteaching and Team Teaching in FL Teacher Education." Foreign Language Annals 5; 2 (December, 1971) 226-234. [EJ047650] (N.NS.PS)

Postsecondary Teaching:

Davis, Arnold R. "Microteaching in a Small Liberal Arts College." Audio-visual Instruction 16; 3 (March, 1971) 80-82. [EJ034765] (HE.NS.PS)

Johnson, Glenn R., et al. Improving College Teaching via Microteaching and Interaction Analysis: A Handbook for Professors and Prospective Instructors. January, 1974. [ED102933]

A method for combining the techniques of microteaching with those of interaction process analysis is presented. Using this method a matrix analysis can be performed which will give a teacher feedback on the target objectives for a given microteaching session. This handbook gives the rationale for this method, presents a General Inventory Guide for Evaluating Microteaching (GIGEM) and illustrates its use with transcripts. (N.NS.IS)

Mellon, Edward K., and Dence, Joseph B. "Orientation for Teaching Assistants Using Videorecorded Microteaching." Journal of Chemical Education 48; 10 (October, 1971) 674-675. (H.Ch.IS)

Personal Growth Counseling, Assertion Training, Self Assessment:

Bierschenk, Bernhard. Perceptual, Evaluative, and Behavioral Changes Through Externally Mediated Self-Confrontation; Explorations and Experiments in Microsettings. May, 1974. [ED092154]

The development and application of the idea of microteaching in research and education is described in this report. It examines the use of different feedback devices for self-control and self-direction. The main conclusions reached are: (1) externally mediated self-confrontation via CCTV/VR is a therapeutic treatment; and (2) microsetting models still are without theoretical foundations. (HE.NS.NS)

Elsenrath, Dennis E., et al. "Microteaching Interviewing Skills." Journal of Counseling Psychology 19; 2 (March, 1972) 150-155. [EJ056145]

An audiotaped program teaching interviewing skills was developed incorporating a microteaching component approach. The study investigated the effectiveness of a programmed approach in the development of interview skills. (N.NS.NS.)

Gormally, James, et al. "A Microtraining Approach to Assertion Training." Journal of Counseling Psychology 22; 4 (July, 1975) 299-303. [EJ123558]

Evaluates a microtraining approach for training situationally non-assertive clients in assertive expression. Procedure included individualized training situations and a test of generalization. Microtraining, regardless of feedback type, increased self-rated and objectively rated assertiveness compared to an insight-oriented counseling control. (AE.AsTr.NS.)

James, Margaret A. The Effect of Reinforcement on the Self-Image and Attitude Toward School of Minority Youngsters. Final Report. June, 1973. [ED078123]

This investigation attempted to determine whether pre-service teachers who had been trained through micro-teaching in the skill of using reinforcement could bring about any change in minority youngsters' attitudes about themselves and about school. All student teachers had

complete control of one class from the first day in the fall until school closed in June. Each student teacher administered pre and post inventories to the pupils in this class. Mean change scores were computed for each student teacher and a comparison of the two groups indicates that teachers who have been trained to use reinforcement may effect positive changes in their pupils' self-image, but have a negative effect on their pupils' attitude toward school. (HE.NS.PS)

Taylor, Stephen S., and Jahns, Irwin R. The Effects of Microtraining for Attending Behaviors in Adult Testing (no date of publication). [ED094108]

It has been the experience of most adult basic education teachers that their students are apprehensive about taking tests. The study evaluates the effects of training adult basic education teachers in behavioral attending skills. Two basic questions were investigated: (1) would the training of instructors in the use of behavior attending skills lead to a corresponding decrease in test anxiety on the part of examinees? and (2) what was the degree of permanence of the subjects' learned behavioral skills? A 1-hour micro-training session with an experimental and control group was used. It was found that the experimental group of teachers differed significantly from the control group in the behavioral skills of attending after training and that this difference was maintained 2 months later. It was also found that this test anxiety was lower for examinees tested by the experimental group than those tested by the control group. (HE.NS.IS)

Technical Skills of Teaching:

Graham, George M. "A Bridge Between 'What Is' and 'What Could Be.'" Physical Educator 32; 1 (March, 1975) 14-16. [EJ131654]

This article presents seven teaching behaviors which have been organized into a sequential progression for utilization with undergraduate trainees prior to student teaching. (HE.PE.PS)

Kentucky University. Teaching Skills Program. 1975. [ED117063] (Sec.NS.PS)

Minicourse:

Borg, Walter A. "The Minicourse as a Vehicle for Changing Teacher Behavior: A Three-Year Follow-Up." Journal of Educational Psychology 63; 6 (December, 1972) 572-579. [EJ067597] (N.NS.IS)

_____. "The Minicourse--A Milestone on the Road to Better Teaching." British Journal of Educational Technology 2; 1 (January, 1971) 14-23.

This article describes a large-scale teacher education program which employs a self-contained package of materials designed to train teachers to use specific teaching skills. (N.NS.IS)

Bredange, Gunlog, and Tingsell, Jan-Gunnar. Transfer and Adaptation to Swedish Teacher Training of Minicourse 1: Effective Questioning. June, 1974. [ED114369] (N.NS.PS)

Dunning, Barbara B., and Gall, Meredith D. "A Very Legitimate Pride." Arithmetic Teacher 18; 5 (May, 1971) 339-344. [EJ039138]

The minicourse Individualizing Instruction in Mathematics by the Far West Laboratory for Education Research and Development is described. (HE.Mth.IS)

Gall, Meredith D., et al. Comparison of Instructional Media in a Minicourse on Higher Cognitive Questioning. Paper presented at the Annual Meeting of the AERA, Chicago, Ill., April, 1972. [ED064326]

The two main purposes of this study were: (1) to determine the effectiveness of a teacher training program "Minicourse 9: Higher Cognitive Questioning"; and (2) to compare the relative effectiveness of two instructional techniques in changing teacher behavior-observation of videotaped model teachers displaying classroom skills, and reading of transcripts derived directly from the videotapes. A group of 54 teachers took Minicourse 9. A separate group of 24 teachers served as controls. A pre- and post-measure of each teacher's discussion behavior were collected. The two student response measures--frequency and length of higher cognitive responses--both increased favorably as a consequence of the Minicourse. The study indicates that the course was ineffective in changing teachers' use of refocusing. It also indicates that the written version of Minicourse 9 is at least equally as effective as the video version. On some course indices, such as probing questions, the written version is clearly superior. However, the written materials used in this study were developed directly from videotapes, and as a result, probably had greater realism and interest than if composed by a writer who created the classroom dialogue. (N.NS.IS)

Grunewald, Robert N. School District-University Cooperation in Competency-Based Inservice Teacher Education. 1973. [ED096259]

This article describes a jointly planned and jointly evaluated course offered through Washington State University General Extension. The purpose of the course was to improve instruction in elementary classrooms through use of competency-based training materials (minicourses) from the Far West Laboratory for Educational Research and Development. The Minicourse used, entitled "Minicourse I, Effective Questioning: Elementary Level," was designed to improve the questioning and discussion skills of primary and intermediate grade teachers. (El.NS.IS)

Oliver, Hugh. "Microteaching and Minicourses." Orbit 1; 5 (December, 1970) 3-5. [EJ030119] (N.NS.IS)

Skailand, Dawn. Teacher Education Through Minicourse 18: Teaching Reading As Decoding. 1973. [ED074719]

The teaching of reading as a decoding process was an educational strategy used by the Minicourse 18 model of teacher education. This report analyzes the field data taken from four school test sites and assesses the effectiveness of the strategy. Multivariate Statistical

analysis shows the program has a significant effect in course-approved directions of teaching behavior, but reveals little difference on teacher entry and gain scores for central city as opposed to suburban teachers. An independent study that ran concurrently with the Minicourse 18 field tests showed that student achievement favored the use of this strategy. (N.Rd.IS)

State University of New York, Fredonia. The Usefulness of Minicourse I in the Inservice Training of Elementary Teachers. Final Report. March, 1972. [ED072006]

Fifty-two teachers in 13 widely distributed New York schools participated in the program on a voluntary basis. Thirteen Minicourse sessions were completed according to a timetable. Each instructional sequence required 1 week for participating teams to complete. A follow-up study, during the second semester, provided materials for each participating teacher in six schools. The primary source of data was three recorded teaching episodes, 15 minutes in length, which were collected prior to the beginning of the Minicourse program, at the end of the program, and at the end of a 6-month period following the program. Results indicated that teachers' behavior changed in directions intended by the Minicourse program and that the qualitative changes were well beyond the level required for statistical significance. (E1.NS.IS)

Strong, William. "Plugging in the Minicourse." English Education 3; 2 (Winter, 1972) 96-102. [EJ053328]

Discusses the rationale for minicourses and microteaching and the value of their use in methods courses to help prospective teachers acquire competence in basic teaching skills. (N.NS.PS)

Texas Information Service, Austin. Teacher Training Through the Minicourse. 1972. [ED083127]

Presented is an information package designed to answer questions regarding the use of microteaching and the Far West Laboratory's Minicourses. (N.NS.IS)

Ward, Beatrice, et al. The Minicourse in Teacher Education. A Report on Minicourse Utilization in Teacher Corps Programs. 1972. [ED091356]

This monograph, divided into three sections, describes minicourses, outlines their possible application, presents reports from three teacher training institutions that demonstrated minicourses in conjunction with their Teacher Corps programs, and suggests guidelines for minicourse utilization in teacher education. (HE.NS.PS)

Weathersby, Rita. "Minicourses for Teachers." Instructor Development 2; 5 (February, 1971) 3. [EJ033661] (N.NS.NS)

Werner, Edwenna R., et al. The Minicourse as a Method for Training Teachers to Stimulate Divergent Thinking. Paper presented at the annual meeting of the AERA, Chicago, Ill., April, 1972. [ED064340]

Fifty-nine inservice teachers in grades 1 through 12 took "Minicourse 20: Divergent Thinking," a course training teachers to use brainstorming to

stimulate divergent thinking in students. Tapes of brainstorming sessions were made before, after, and seven weeks after the course ended. Experimental teachers improved significantly more than the controls in the skills of not evaluating during brainstorming and not making unnecessary comments (e.g., repeating answers) or shaping student ideas (e.g., probing answers). They did not show improvement in the use of techniques such as categorizing to stimulate more divergent brainstorming. Teaching skills were acquired equally well by teachers who microtaught with audiotape feedback and by those who microtaught with videotape feedback. Control teachers showed no gains in teaching skills. Brainstorming responses given by students of the teachers were analyzed. Elementary students showed significantly greater gains in fluency, flexibility, and originality than the control group. The secondary sample did not improve. There were no significant differences between experimental and control groups on the Torrance Tests of Creative Thinking given before and seven weeks after the course. (El & Sec. NS.IS)

V. Bibliographies, Concept Programs, Critical and Protagonists' Papers

Clift, Charles. Videotape: A Synthesis of Research in the Use of Audio-Visual Replay for Instructional Development; A Selected Bibliography of Videotape Utilization. Paper presented at the Annual Meeting of The Speech Communication Association, New York City, November, 1973. [ED085785]

This paper synthesizes research in videotape utilization within several disciplines--teacher education, counselor education, psychological therapy, business training, and speech education--with three objectives: to bring mass communication educators up to date in the non-broadcast uses and techniques of videotape; to provide guidelines for videotape utilization; and to encourage educators in mass communications to convey these guidelines through workshops or seminars to utilizers of videotape systems in other disciplines. (N.Co,PTh,Bs,Sp.IS)

Clift, J. C., and Malley, J. I. Bibliography of Microteaching with Selected Annotations. 1974. [ED103428]

This bibliography is part of a larger study on the cost effectiveness of microteaching and is divided into four sections. The first three sections contain 467 unannotated entries and include bibliographies, reviews, and general references. The last section contains annotations for 86 documents. (HE.NS.NS)

Cooper, James, et al. Microteaching: Selected Papers. 1971. [ED055960]

This is the second of a series of three bulletins dealing with "Supervisory Strategies in Clinical Experiences." The first of the two papers, "Microteaching: History and Present Status," by James M. Cooper and Dwight W. Allen, begins with a definition of microteaching as a teaching situation which is scaled down in terms of time and numbers of students, but which is not synonymous with simulated teaching, as the teacher, students, and lesson are all "real." The history of microteaching from its development in 1963 is outlined, followed by an

explanation of the rationale, the uses of microteaching in preservice and inservice training, and the training of college teachers. Research evidence on the effectiveness of microteaching is examined and the teaching skills involved are listed. There is a bibliography of 58 items. The second paper, "Microteaching in Teacher Education Programs," by Robert F. Schuck, considers three programs: (1) the original Stanford Teacher Education Project, which developed nine specific technical skills in secondary education; (2) the Brigham Young University Program, which forms part of the preservice curriculum; and (3) the San Jose State College Study of that institution's program for elementary intern teachers. A brief concluding section suggests that microteaching holds promise as a research strategy for investigators interested in patterns of instruction. (N.NS.IS & PS)

Falus, I., and McAleese, Raymond. "A Bibliography of Microteaching." Programmed Learning and Education Technology 12; 1 (January, 1975) 34-53. [EJ117923] (N.NS.NS)

Kirkton, Carole Masley. "An ERIC Guide to Microteaching Evaluation." English Education 2; 3 (Spring, 1971) 142-149. [EJ039968] (N.NS.PS)

Manis, Dane. An Examination of the Research on the Effectiveness of Microteaching as a Teacher Training Methodology. March, 1973. [ED083227]

This paper reviews 69 studies on microteaching, focusing on three main areas: (a) the rationale behind its use, (b) the conditions and degrees of possible goal attainment, and (c) policy making in teacher education in relation to it. (HE.NS.PS)

McAleese, W. Raymond. "Microteaching: A New Tool in the Training of Teachers." Educational Review 25; 2 (February, 1973) 131-142. [EJ077153] (N.NS.PS)

_____, and Unwin, Derick. "A Bibliography of Microteaching." Programmed Learning and Educational Technology 10; 1 (January, 1973)2-5.[EJ071729] (N.NS.NS)

_____. "A Selective Survey of Microteaching." Programmed Learning and Educational Technology 8; 1 (January, 1971) 10-21. [EJ042639] (N.NS.PS)

Pereira, Peter, and Guelcher, William. The Skills of Teaching: A Dynamic Approach. 1970. [ED049162]

Three premises underlie the practice of microteaching: that much of teaching consists of behaviors, that the total performance can be broken into smaller pieces of behavior with little consideration given to the relationship between these parts, and a teaching performance can be usefully analyzed without consideration of what precedes or follows it. The first danger in this approach arises from the problem of isolating the constituents of teaching and setting up a doctrinaire list of skills. The second danger is failure to consider how different parts of complex behavior interact with each other. The analogies drawn between teaching painting skills or the training of a pilot and the preparation of a teacher overlook the obvious difference between paints or planes and students, who are capable of acting independently of the teacher's wishes, thus preventing a closed feedback system which would permit an accurate evaluation of

the teacher's behavior. Primary emphasis therefore should be on the acquisition of principles to guide action with secondary emphasis on the development of skills. This dynamic skills approach regards skills as behavior in context with a perception of what preceded it and an anticipation of what may follow. It provides the teacher with a conceptual model in which there is sufficient freedom within the structure for the students to explore alternative paths to the desired goal. (N.NS.NS)

Sadker, Myra, and Cooper, James M. "What Do We Know About Microteaching?" Educational Leadership 29; 6 (March 1972) 547-51. [EJ054703](N.NS.PS)

ABOUT ERIC--EDUCATIONAL RESOURCES INFORMATION CENTER

ERIC

ERIC is a nationwide information system of the National Institute of Education, designed to serve and advance American education. Its basic objective is to provide ideas and information on significant current documents (research reports, articles, theoretical papers, tested methods, published or unpublished conference papers, newsletters, and curriculum guides or studies) and to publicize the availability of such documents. Each clearinghouse focuses its activities on a separate subject matter area; acquires, evaluates, abstracts, and indexes documents; processes many significant documents in the ERIC system; and publicizes available ideas and information to the education community through its own publications, those of Central ERIC, and other education media.

THE CLEARINGHOUSE ON TEACHER EDUCATION

The ERIC Clearinghouse on Teacher Education, established June 20, 1968, is sponsored by four professional groups--the American Association of Colleges for Teacher Education (AACTE) (serves as fiscal agent); the American Alliance for Health, Physical Education, and Recreation (AAHPER); the Association of Teacher Educators (ATE); and the National Education Association (NEA). The Clearinghouse scope is the preparation of education personnel and, since March 1973, selected aspects of health education, physical education, and recreation education.

ACQUISITIONS

One of the main tasks of the Clearinghouse is the acquisition of documents within its scope. The Clearinghouse regularly receives publications from schools and professional associations around the country. But the majority of documents must come unsolicited, from researchers, teachers, and project directors who have produced or are producing materials within these subject areas. All documents sent to the Clearinghouse are evaluated by subject experts. If they meet Clearinghouse selection criteria, they are abstracted and indexed for announcement in the abstract journal, Resources in Education (RIE). The majority of RIE documents are then made available for study on microfiche at over 600 locations (universities, public libraries, professional associations, government agencies) that have an ERIC microfiche collection. Documents can usually be purchased in microfiche or "hardcopy" (xerographic reproduction) from the ERIC Document Reproduction Service (EDRS), P. O. Box 190, Arlington, Va. 22210.

ORDER FORM

ERIC

DOCUMENT REPRODUCTION SERVICE
P.O. Box 190 ARLINGTON, VIRGINIA 22210 • (703) 841-1212

OPERATED BY: COMPUTER MICROFILM INTERNATIONAL, CORP.

SHIP TO: _____

BILL TO: _____

ED NUMBER	NO. OF PAGES	NO. OF COPIES MF	NO. OF COPIES HC	UNIT PRICE	TOTAL
TOTAL NO. OF PAGES				SUBTOTAL	
TAX EXEMPT NO. _____		VA RESIDENTS ADD 4% SALES TAX			
DEPOSIT ACCT. NO. _____		POSTAGE			
		TOTAL			

IMPORTANT INSTRUCTIONS

- **ORDER BY ED NO.** (6 digits)
  See Resources in Education
- **SPECIFY EITHER:**
  Microfiche (MF)
  or
  Paper Copy (HC)
- **ENTER UNIT PRICE**
  (See Below)
- **INCLUDE POSTAGE**
  (See Below)
- **ENCLOSE CHECK or MONEY ORDER**
  Payable to EDRS or Computer Microfilm International Corp.
  (U.S. Funds Only)
- **MAIL TO:**
  EDRS
  P. O. Box 190
  Arlington, Virginia 22210
- **COMPLETE AND SIGN BELOW**

Date _____

Signature _____

Title _____

UNIT PRICE SCHEDULE
(Effective June 10, 1976)

MICROFICHE (MF)		PAPER COPY (HC)	
NUMBER FICHE EACH ED #	Price	NUMBER PAGES EACH ED #	Price
1 to 5	$ .83	1 to 25	$1.67
6	1.00	26 to 50	2.06
7	1.16	51 to 75	3.50
8	1.33	76 to 100	4.67
Each additional microfiche	.167*	Each additional 25 pages	1.34

*Total Price Should Be Rounded to Nearest Cent

CHART FOR DETERMINING UNITED STATES POSTAGE

1st CLASS POSTAGE FOR		4TH CLASS POSTAGE FOR TOTAL MF OR HC PAGES INDICATED (Allow 3-4 weeks delivery time from date of order)							
1-3 Microfiche Only	4-7 Microfiche Only	60 or less MF or HC Pages	61-120 MF or HC Pages	121-180 MF or HC Pages	181-240 MF or HC Pages	241-300 MF or HC Pages	301-360 MF or HC Pages	361-420 MF or HC Pages	Each Additional 60 MF or HC Pages
.13	.24	.25	.35	.45	.55	.65	.75	.85	.08

*Costs For Priority Shipment Available Upon Request.

For Foreign Postage SEE REVERSE—

GENERAL INFORMATION

1. PRICE LIST
The prices set forth herein may be changed without notice; however, any price change will be subject to the approval of the National Institute of Education Contracting Officer.

2. PAYMENT
The prices set forth herein do not include any sales, use, excise, or similar taxes which may apply to the sale of microfiche or hard copy to the Customer. The cost of such taxes, if any, shall be borne by the Customer.

Payment shall be made net thirty (30) days from date of invoice. Payment shall be without expense to CMIC.

3. REPRODUCTION
Express permission to reproduce a copyrighted document provided hereunder must be obtained in writing from the copyright holder noted on the title page of such copyrighted document.

4. CONTINGENCIES
CMIC shall not be liable to Customer or any other person for any failure or delay in the performance of any obligation if such failure of delay (a) is due to events beyond the control of CMIC including, but not limited to, fire, storm, flood, earthquake, explosion, accident, acts of the public enemy, strikes, lockouts, labor disputes, labor shortage, work stoppages, transportation embargoes or delays, failure or shortage of materials, supplies or machinery, acts of God, or acts or regulations or priorities of the federal, state, or local governments; (b) is due to failures of performance of subcontractors beyond CMIC's control and without negligence on the part of CMIC; or (c) is due to erroneous or incomplete information furnished by Customer.

5. LIABILITY
CMIC's liability, if any, arising hereunder shall not exceed restitution of charges.

In no event shall CMIC be liable for special, consequential, or liquidated damages arising from the provision of services hereunder.

6. WARRANTY
CMIC MAKES NO WARRANTY, EXPRESS OR IMPLIED, AS TO ANY MATTER WHATSOEVER, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

7. QUALITY
CMIC will replace products returned because of reproduction defects or incompleteness. The quality of the input document is not the responsibility of CMIC. Best available copy will be supplied.

8. CHANGES
No waiver, alteration, or modification of any of the provisions hereof shall be binding unless in writing and signed by an officer of CMIC.

9. DEFAULT AND WAIVER
a. If Customer fails with respect to this or any other agreement with CMIC to pay any invoice when due or to accept any shipment as ordered, CMIC may without prejudice to other remedies defer any further shipments until the default is corrected, or cancel this Purchase Order.
b. No course of conduct nor any delay of CMIC in exercising any right hereunder shall waive any rights of CMIC or modify this Agreement.

10. GOVERNING LAW
This Agreement shall be construed to be between merchants. Any question concerning its validity, construction, or performance shall be governed by the laws of the State of New York.

11. DEPOSIT ACCOUNTS
Customers who have a continuing need for ERIC documents may open a Deposit account by depositing a minimum of $200.00. Once a deposit account is opened, ERIC documents will be sent upon request, and the account charged for the actual cost and postage. A monthly statement of the account will be furnished.

12. STANDING ORDER ACCOUNTS
Customers who desire to receive microfiche copies of all ERIC reports announced in each issue of Resources in Education may do so by depositing $2000.00 or submitting an executed purchase order. The cost of each issue and postage will be charged against the account. A monthly statement of the account will be furnished.

13. PAPER COPY (HC)
A paper copy (HC) is xerographic reproduction, on paper, of the original document. Each paper copy has a Vellum Bristol cover to identify and protect the document.

14. FOREIGN POSTAGE
Postage for all countries other than the United States is based on the international Postal Rates in effect at the time the order is shipped. To determine postage allow 60 microfiche or 60 (HC) pages per pound. Customers must specify the exact classification of mail desired, and include the postage for that classification with their order. Payment must be in United States funds.

OTHER ERIC COLLECTIONS AVAILABLE FROM EDRS

STANDING ORDERS

Subscription orders of microfiche copies of all ERIC reports announced in each issue of **Resources in Education** average $160.00 per month at the rate of 8.7¢ per microfiche. Postage extra.

BACK COLLECTIONS (postage extra)

Reports in *Research in Education for* 1966 and 1967	$ 385.06
Reports in *Research in Education for* 1968	1,159.36
Reports in *Research in Education for* 1969	1,383.21
Reports in *Research in Education for* 1970	1,408.36
Reports in *Research in Education for* 1971	1,643.69
Reports in *Research in Education for* 1972	1,701.28
Reports in *Research in Education for* 1973	1,481.70
Reports in *Research in Education for* 1974	1,548.60
Reports in *Resources in Education for* 1975	1,734.61
Reports in *Resources in Education* Jan.–Apr. 1976	545.92
Entire Collection	$12,991.79

AIM/ARM MICROFICHE COLLECTIONS (postage extra) $0.158/fiche

CLEARINGHOUSE MICROFICHE COLLECTIONS (postage extra) $0.162/fiche

SPECIAL COLLECTIONS (postage extra)

Office of Education Research Reports 1956-65	$ 404.43
Pacesetters in Innovation, Fiscal Year 1966	144.57
Pacesetters in Innovation, Fiscal Year 1967	175.31
Pacesetters in Innovation, Fiscal Year 1968	112.12
Selected Documents on the Disadvantaged	334.28
Selected Documents in Higher Education	153.48
Manpower Research: Inventory for Fiscal Year 1966 and 1967	79.67
Manpower Research: Inventory for Fiscal Year 1968	44.41
Manpower Research: Inventory for Fiscal Year 1969	57.71